

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC 20554**

In the Matter of	)	
	)	
	)	
LightSquared Subsidiary LLC	)	Report No. SAT-00738
	)	SAT-MOD-20101118-00239
Application for Modification of S2358	)	

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**REPLY**

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December 9, 2010

1333 H Street  
Suite 700 West  
Washington, DC 20005  
(202) 452-7823



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Pursuant to Section 309(d)(1) of the Communications Act,<sup>1</sup> and Section 25-154 of the Commission's rules,<sup>2</sup> the Wireless Communications Association International, Inc. ("WCAI"), the trade association of the wireless broadband industry,<sup>3</sup> submits this Reply in the above-referenced proceeding initiated by LightSquared Subsidiary LLC ("LightSquared").<sup>4</sup>

## **I. DISCUSSION**

### **A. The filing deadlines imposed by the Commission do not provide sufficient time to resolve complex questions regarding the significant potential for harmful interference to GPS systems posed by LightSquared's new business plan.**

WCAI agrees with the U.S. GPS Industry Council and other commenters that the Commission's filing deadlines in this proceeding do not provide sufficient time to resolve complex questions regarding the significant potential for harmful interference to GPS systems, and that this complex issue should be considered in the context of the Commission's ongoing MSS ATC rulemaking proceeding.

The Commission has never adequately addressed the appropriate out of band emission ("OOBE") limits for MSS ATC base stations and mobile devices. The National Telecommunications Information Administration ("NTIA")<sup>5</sup> and the Commission<sup>6</sup>

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<sup>1</sup> 47 U.S.C. § 309(d)(1).

<sup>2</sup> 47 C.F.R. § 25.154.

<sup>3</sup> As the Commission is aware, among WCAI's members are providers of commercial broadband services, including carriers that may be potential customers for LightSquared's services.

<sup>4</sup> Public Notice, File No. SAT-MOD-20101118-00239, Report No. SAT-00738 (rel. Nov. 19, 2010).

<sup>5</sup> See Letter from Karl B. Nebbia, Associate Administrator, Office of Spectrum Management, National Telecommunications and Information Administration, to Julius Knapp, Chief, Office of Engineering and Technology, Federal Communications Commission, ET Docket No. 10-142 (filed July 21, 2010).

<sup>6</sup> See Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz Bands, *Report and Order and Notice of Proposed Rulemaking*,

have long recognized the potential for serious interference to GPS systems posed by L-Band MSS ATC operations. But, in the original MSS ATC proceeding, the Commission applied to MSS ATC the same OOB limits applicable to MSS satellite mobile earth terminals, which were in turn based on protection of GPS receivers used on aircraft.<sup>7</sup> Rather than develop OOB limits designed to protect terrestrial GPS use, which would be expected to operate in much closer proximity to terrestrial ATC transmitters, the Commission decided that it would "consider possible changes in our protection requirements for [GPS] in a future rulemaking proceeding."<sup>8</sup> In the meantime, the Commission committed to coordinating any MSS ATC authority grant with NTIA to assure adequate protection of the GPS.<sup>9</sup>

The Commission has thus far relied on an *ad hoc* approach to the protection of terrestrial GPS receivers from radiofrequency interference caused by MSS ATC operations. This *ad hoc* approach has included input from both NTIA and industry, notably including the U.S. GPS Industry Council, and has resulted in the imposition of stricter OOB limits on MSS ATC licensees.

For this *ad hoc* approach to be effective, however, sufficient time must be provided to analyze the complex interference issues presented by this application.

Several commenters in this proceeding raised the potential for serious interference to

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FCC 03-15 at ¶ 180 (2003) ("*2003 MSS ATC Order*") (recognizing that the unwanted emissions from terrestrial stations in the MSS will have to be carefully controlled in order to avoid interfering with GPS receivers).

<sup>7</sup> See *2003 MSS ATC Order* at ¶182. Those limits were based on an "assumed separation distance of approximately 100 feet between an airborne GPS receiver and a single terrestrial transmitter." *Id.* at n. 482.

<sup>8</sup> See Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz Bands, *Memorandum Opinion and Order Second Order on Reconsideration*, FCC 05-30 at ¶ 69 (2005) ("*2005 MSS ATC Recon Order*").

<sup>9</sup> *Id.* at ¶ 71.

GPS systems posed by LightSquared's new "ancillary satellite component" business plan.<sup>10</sup> In particular, the U.S. GPS Industry Council notes that LightSquared's business plan completely reworks the MSS ATC paradigm "with potentially harmful consequences for the installed GPS user base, including public safety implementations, due to the dramatically increased number and broader distribution of terrestrial transmitting equipment."<sup>11</sup> The OOB limits established in LightSquared's current MSS ATC authorization were premised on an MSS ATC system with a relatively limited number of base stations and mobile devices, not an "ancillary satellite component" system with the much larger number of base stations and mobile devices typically found only in a nationwide terrestrial deployment.

The Commission's GPS interference analysis was also performed in 2003 when mobile GPS devices were not widely available. Broad availability of consumer-oriented devices with GPS did not appear until late 2006,<sup>12</sup> and since then, GPS receivers have steadily proliferated. For example, GPS chipset shipments grew from 110 million in 2006<sup>13</sup> to over 300 million in 2009.<sup>14</sup> The vast majority of these GPS chipsets were placed in consumer-level mobile devices – like cameras, notebooks, in-

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<sup>10</sup> See Comments of the U.S. GPS Industry Council, File No. SAT-MOD-20101118-00239 (filed Dec. 2, 2010); Comments of CTIA – The Wireless Association, File No. SAT-MOD-20101118-00239 at 8-9 (filed Dec. 2, 2010); Comments of AT&T Inc., File No. SAT-MOD-20101118-00239 at 13-14 (filed Dec. 2, 2010).

<sup>11</sup> U.S. GPS Industry Council Comments at 6.

<sup>12</sup> See <http://consultantvalueadded.com/2009/05/31/mobile-and-gps-born-to-live-together-in-the-short-term/>.

<sup>13</sup> See [http://www.gpsdaily.com/reports/GPS\\_Chipset\\_Shipments\\_To\\_Grow\\_From\\_110\\_Million\\_To\\_725\\_Million\\_Units\\_In\\_2011\\_999.html](http://www.gpsdaily.com/reports/GPS_Chipset_Shipments_To_Grow_From_110_Million_To_725_Million_Units_In_2011_999.html).

<sup>14</sup> See [http://www.gpsbusinessnews.com/GPS-IC-market-over-300M-in-2009\\_a2188.html](http://www.gpsbusinessnews.com/GPS-IC-market-over-300M-in-2009_a2188.html).

car systems, and handsets –that would typically be used in close proximity to the LTE consumer devices LightSquared intends to deploy.

When the widespread deployment contemplated by LightSquared is combined with the proliferation of GPS receivers since the original MSS ATC rulemaking concluded, it is clear that the Commission’s assumptions concerning the likelihood of interference to GPS are inapplicable to LightSquared’s proposed business plan. Until LightSquared’s recent proposal, the deployment in the L-Band of 40,000 terrestrial base stations using the LTE air interface was not contemplated by the Commission.<sup>15</sup> In its *2005 MSS ATC Recon Order*, the Commission said:

We can see no reason why an MSS/ATC operator would install ATC base stations in any area where customer demand can be adequately accommodated by the operator’s satellite system.<sup>16</sup>

Although the Commission did not foresee such a result, LightSquared is now proposing to deploy MSS ATC base stations “without regard to satellite coverage.”<sup>17</sup>

The Commission also did not intend to allow the use of terrestrial only handsets in an MSS ATC system,<sup>18</sup> and clearly did not expect an MSS ATC licensee to deploy 40 million mobile devices.<sup>19</sup> For example, in the *2003 MSS ATC Order*, the Commission relied on a 100-foot separation distance rather than the more common 2-meter separation distance based on its conclusion that the probability of a L-band

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<sup>15</sup> See File No. SAT-MOD-20101118-00239, application narrative at p. 3-4.

<sup>16</sup> *2005 MSS ATC Recon Order* at ¶ 27.

<sup>17</sup> Letter from Henry Goldberg, Counsel to Harbinger Capital Partners Funds, to Marlene H. Dortch, Secretary, FCC, IB Docket No. 08-184 (filed Mar. 26, 2010) at 3 (“*Business Plan Letter*”).

<sup>18</sup> *2005 MSS ATC Recon Order* at ¶ 33. As the U.S. GPS Industry Council notes in its comments, allowing terrestrial only devices also destroys incentives for MSS ATC licensees to avoid self-interference to their satellite operations. U.S. GPS Industry Council Comments at p. 10.

<sup>19</sup> The Commission’s original adjacent channel interference scenario in the L-Band assumed on 90,000 simultaneously transmitting MSS ATC mobile devices. *2003 MSS ATC Order* at ¶ 188.

MSS ATC mobile transmitter being located within 2 meters of a GPS receiver “is relatively small.”<sup>20</sup> Now that more than 300 million GPS receivers are shipping each year, it is almost certain that a significant portion of LightSquared’s 40 million MSS ATC devices would routinely be located within 2 meters of a GPS receiver. These fundamental changes in LightSquared’s deployment scenario also fundamentally alter the Commission’s initial GPS interference analysis, which should be reconsidered before LightSquared’s application is granted.<sup>21</sup>

The potential for harmful interference to terrestrial GPS presented by LightSquared’s proposal is significant, but cannot be adequately addressed within the truncated timeframe available. To ensure that LightSquared’s proposal does not cause harmful interference to terrestrial GPS operations would require more time than the Commission has allotted in this proceeding. Accordingly, the Commission should dismiss LightSquared’s application and consider its request in the context of the Commission’s ongoing MSS ATC rulemaking proceeding.<sup>22</sup> If the Commission does not dismiss the application, the Commission should issue a supplemental public notice providing additional time to address the significant potential for harmful interference to terrestrial GPS receivers.

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<sup>20</sup> *Id.* at ¶ 182.

<sup>21</sup> See U.S. GPS Industry Council Comments at p. 8; AT&T comments at p. 14.

<sup>22</sup> See Fixed and Mobile Services in the Mobile Satellite Service Bands at 1525-1559 MHz and 1626.5-1660.5 MHz, 1610-1626.5 MHz and 2483.5-2500 MHz, and 2000-2020 MHz and 2180-2200 MHz, *Notice of Proposed Rulemaking and Notice of Inquiry*, FCC 10-126 (rel. Jul. 15, 2010).

**B. This proceeding provides the first opportunity to consider the significant potential for harmful interference to terrestrial GPS systems posed by LightSquared's proposed deployment**

WCAI expects that LightSquared will attempt to avoid careful scrutiny of the significant potential for harmful interference to GPS systems associated with its new business plan by relying on a version of the argument it made in its opposition to CTIA's extension request – that its application “merely elaborates” on the business plan that it filed in support of the Harbinger-SkyTerra transfer of control proceeding.<sup>23</sup> But, the significant interference concerns associated with LightSquared's proposal to decouple its satellite and terrestrial services -- raised here for the first time -- were never considered in the Commission's initial decision approving gating criteria. Critical features of LightSquared's new business plan were not disclosed until the Commission acted on LightSquared's initial application – meaning that nobody had an opportunity to be an “objecting party.” The Commission must now carefully consider the potential for interference to GPS reception before LightSquared or its wholesale customers are permitted to operate under LightSquared's proposed “ancillary satellite component” construct.

The sequence of events is critical here. Harbinger filed in its transfer of control proceeding a public version of its business plan revealing its intent to build “a nationwide terrestrial broadband mobile 4G LTE network” on March 26, 2010. That *same day*, the Commission adopted and released its order granting the transfer.<sup>24</sup> The

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<sup>23</sup> See Opposition of LightSquared Subsidiary LLC, File No. SAT-MOD-20101118-00239 at p. 2 (filed Nov. 24, 2010).

<sup>24</sup> See SkyTerra Communications Inc., Transferor, and Harbinger Capital Partners Funds, Transferee, *Applications for Consent to Transfer of Control of SkyTerra Subsidiary LLC*, DA 10-535 (rel. Mar. 26, 2010).



public could not reasonably be expected to have had an opportunity to comment on this business plan between the time of its filing on March 26, 2010 and grant of the transfer of control application on March 26, 2010, especially when the business plan filing was not posted on the Commission's website until March 29, 2010, three days later.

When LightSquared filed its business plan, it also had a pending application to modify its MSS ATC authorization to which several parties had objected.<sup>25</sup> But nobody had an opportunity to object to the new business plan in that proceeding either, because that application too was granted the same day LightSquared filed its new business plan.<sup>26</sup> The simultaneous grant of LightSquared's transfer of control and MSS ATC modification applications thus prevented any opportunity to consider in either proceeding the potential impact of LightSquared's new business plan on terrestrial GPS receivers. Careful consideration must now be given to the increased potential for interference to GPS reception.

**C. If the Commission declines to address the significant potential for harmful interference to terrestrial GPS systems through a rulemaking, the Commission should take other steps to mitigate the potential for harm to consumers, public safety, and competition.**

WCAI supports AT&T's request that, if the Commission declines to address the issues raised in this proceeding via rulemaking, the Commission should initiate another proceeding to explore the technical issues presented by LightSquared's proposed terrestrial operations, to ensure that any potential harmful interference to

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<sup>25</sup> See File No. SAT-MOD-20090429-00046.

<sup>26</sup> See SkyTerra Subsidiary LLC, Application for Modification Authority for an Ancillary Terrestrial Component, *Order and Authorization*, DA 10-534 (rel. Mar. 26, 2010).

GPS systems is addressed before LightSquared is operational. Such a proceeding should allow for full participation from all interested parties, including NTIA and the U.S. GPS Industry Council, and should provide sufficient time to develop adequate technical studies based on realistic deployment scenarios.

The Commission should likewise ensure that approval of LightSquared's application minimizes the potential for LightSquared to disrupt or hamper the operations of existing wireless broadband service providers based on the potential for LightSquared's system to cause harmful interference to other providers. Section 25.255 of the Commission's rules specifies that, "[i]f harmful interference is caused to other services by ancillary MSS ATC operations, either from ATC base stations or mobile terminals, the MSS ATC operator must resolve any such interference." By its plain language, this rule places responsibility on the MSS ATC operator to resolve interference issues. It is WCAI's understanding, however, that LightSquared's stated position is that other wireless carriers that use GPS in their transmitters must purchase and install new antennas with GPS filters on their base stations at their own cost. It thus appears that LightSquared misunderstands its responsibilities under Rule 25.255. To ensure that LightSquared complies with the Commission's rules, the Commission should expressly condition any grant of LightSquared's application on LightSquared's compliance with Rule 25.255 by paying costs incurred by other systems to avoid LightSquared's potential to cause harmful interference.

## II. CONCLUSION

For the above reasons, WCAI respectfully requests that the Commission resolve the issues raised in this proceeding in a rulemaking proceeding or, in the alternative, provide additional time to address the issues and impose certain conditions.

Respectfully submitted,

Wireless Communications Association  
International, Inc.

By:       /s/      Fred Campbell

Fred B. Campbell, Jr.  
President & CEO  
1333 H Street, NW, Suite 700 West  
Washington, DC 20005  
202.452.7823

December 9, 2010

## **CERTIFICATE OF SERVICE**

I, Jennifer L. Canose, hereby certify that the foregoing Reply was served this 9th day of December, 2010, by depositing a true copy thereof with the United States Postal Service, first class postage prepaid, addressed to the following:

Jeffrey J. Carlisle  
LightSquared Subsidiary LLC  
10802 Parkridge Blvd.  
Reston, VA 20191

Paul K. Mancini  
Gary L. Phillips  
Michael P. Goggin  
AT&T Inc.  
1120 20th Street, NW  
Washington, DC 20036

Brian M. Josef  
Michael F. Altschul  
Christopher Guttman-McCabe  
CTIA – The Wireless Association®  
1400 Sixteenth Street, NW, Suite 600  
Washington, DC 20036

Donna Bethea Murphy  
Iridium Satellite LLC  
1750 Tysons Blvd., Suite 1400  
McLean, VA 22102

Jeffrey R. Leventhal  
6430 S. Fiddler's Green Circle  
Suite 500  
Greenwood Valley, CO 80111

Alexandra M. Field  
TerreStar Networks Inc.  
12010 Sunset Hills Road  
Reston, VA 20191

Raul R. Rodriguez  
David S. Keir  
Lerman Senter PLLC  
2000 K Street, NW, Suite 600  
Washington, DC 20006

John T. Scott, III  
Catherine M. Hilke  
Verizon Wireless  
1300 I Street, NW, Suite 400 West  
Washington, DC 20005

/s/ Jennifer L. Canose  
Jennifer L. Canose